

REMARKS

Claims 1, 2, 4-9 and 11-16 remain in this application. Claims 1-16 are rejected. Claims 3 and 10 are previously cancelled herein. Claims 1, 4, 6, 8, 11, 13, 15 and 16 are amended herein to clarify the invention and to address matters of form unrelated to substantive patentability issues.

Applicant herein traverses and respectfully requests reconsideration of the rejection of the claims cited in the above-referenced Office Action.

Claims 1, 7, 8 and 14 -16 are rejected as obvious over Yasui (US 6,356,264) in view of Foley under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

Independent claims 1, 8, 15 and 16 are each amended to positively recite the manner of executing exclusion of pixels which correspond to the back-facing polygons of the shadow model whose distances from the viewpoint of the virtual camera in the simulated three-dimensional space are smaller than the Z-values of the corresponding pixels. The independent claims now recite that a shadow image is formed on an outer surface of a 3D model using a shadow model a shadow by performing an operation on frame color data of a first set of pixels (corresponding

to the front-facing polygons of the shadow model whose distances from the viewpoint of the virtual camera in the simulated three-dimensional space are smaller than the Z-values of the corresponding pixels) which is either one of addition or subtraction of a predetermined value thereby creating modified frame color data, and performing an additional operation on the modified frame color data of a second set of pixels (corresponding to the back-facing polygons of the shadow model whose distances from the viewpoint of the virtual camera in the simulated three-dimensional space are smaller than the Z-values of the corresponding pixels) which is an opposite operation of the addition or subtraction using the same predetermined value, whereby said operation alters initial frame color data values of the first set of pixels as indicative of being the shadow creating pixels, and the second set of pixels is effectively excluded as shadow creating pixels by a cancellation of the first operation by performance of the additional operation equal and opposite in value thereto. As such, while pixels of the solid N in the region L, as shown in replacement Fig. 4, which correspond in position to a front-facing polygon are farther from the viewpoint than the front-facing polygon (and therefore included in the first set of pixels), no shadow is represented by the pixels in this region, since the distance between the rearward-facing polygon is smaller than the Z-values of the pixels (i.e. within the second set of pixels, which is a subset of said first set of pixels), and the previously added or subtracted value is canceled out for these pixels by a subsequent subtraction or addition, respectively, of the same value.

It is respectfully submitted that neither of the cited Yasui and Foley references teaches or suggests this claimed feature, and therefore, the combination of references fails to provide all features of the claims, as properly required for establishing a *prima facie* case of obviousness. Therefore, reconsideration of the rejection of claim 1, 7, 8 and 14-16 and their allowance are respectfully requested.

Claims 2 and 9 are rejected as obvious over Yasui (US 6,356,264) in view of Foley, and further in view of Minami (US 6,542,151) under 35 U.S.C. §103(a). Claims 5 and 12 are rejected as obvious over Yasui in view of Foley, and further in view of Yamaguchi (US 6,529,194) under 35 U.S.C. §103(a). Claims 4, 6, 11 and 13 are rejected as obvious over Yasui (US 6,356,264) in view of Foley, and further in view of Nakatsuka (US 6,433,782) under 35 U.S.C. §103(a). The applicant herein respectfully traverses these rejections.

It is respectfully submitted that each of the additional Minami, Yamaguchi and Nakatsuka references fails to provide what is missing from the Yasui and Foley references as discussed relative to claims 1 and 8, from which these rejected claims depend. Thus, the proffered combination of references fails to teach or suggest all the claim limitations. Therefore, reconsideration of the rejection of claim 2, 4-6, 9 and 11-13 and their allowance are respectfully requested.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited. Please charge any deficiency or credit any overpayment to Deposit Account No. 10-1250.

Respectfully submitted,
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